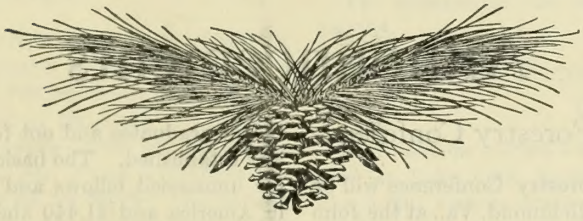
FOREST WORKER



November, 1929

Issued bimonthly by the FOREST SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

CONTENTS

Announcements

Virginia Commercial Forestry Conference

A Virginia Commercial Forestry Conference will be held February 11 and 12 in Richmond, Va., at the John Marshall Hotel. Arrangements for the conference are being made by the Virginia State Chamber of Commerce and a general committee including State Forester Chapin Jones, W. duB. Brookings, in charge of the conservation division of the United States Chamber of Commerce, and representatives of the lumber and wood-using industries, recreational interests, and women's clubs.

National Research Fellowships in Agriculture and Forestry Available

The National Research Council announces the availability of national research fellowships in the biological sciences, including agriculture and forestry. These fellowships, supported by the Rockefeller Foundation, are for study and research in America or abroad, and are open to citizens of both sexes of the United States and Canada who have the Ph. D. degree or its equivalent. They are intended primarily for comparatively recent graduates and not for those already professionally established. The basic annual stipends are $1,800 for unmarried fellows and $2,300 for married fellows in America and $1,440 and $2,400, respectively, with travel allowance in addition, for fellows appointed to study in Europe. Awards are made for one year, but fellowships may be renewed. Fellows for 1930–31 will be chosen at two meetings of a board appointed by the National Research Council. Applications filed before January 1 will be considered at a meeting held the first week in February. To be considered at the second meeting, applications must be filed before April 1.

The choice of the institution in which he shall work is made by the fellow, subject to the approval of the fellowship board. The appointments are for full time, and no other remunerative or routine work is permitted.

Inquiries in regard to the fellowships should be addressed to the chairman, Board of National Research Fellowships in the Biological Sciences, National Research Council, Washington, D. C., or to Dr. A. F. Woods, Director of Scientific Work, Department of Agriculture, Washington, D. C.

The Forest Worker is published by the Forest Service, United States Department of Agriculture, Washington, D. C. Jean Kerr, editor. Material offered for publication in the Forest Worker should be addressed to the editor.

Because the free edition is necessarily limited, this periodical can be distributed without charge outside of the Government service only to such persons and organizations as State forestry and conservation officials, State agricultural extension directors, faculties and libraries of forest schools, and forestry associations. Others desiring to obtain copies of the Forest Worker can do so by sending 5 cents for a single copy or 25 cents for a year's subscription to the Superintendent of Documents, Government Printing Office, Washington, D. C. Foreign subscriptions: Yearly, 35 cents; single copies, 7 cents.

FOREST WORKER

Washington, D. C. NOVEMBER, 1929 Vol. 5, No. 6

State Forestry

New York State Forests for Timber Production

The fall of 1929 has seen New York make a vigorous beginning in the development of productive State forests. Something like 1,750,000 trees were planted in October on lands acquired by the State in Cortland, Chenango, and Otsego Counties under the provisions of the Hewitt reforestation law, which authorizes the establishment of State forests for timber production. Six months after the Hewitt law was enacted in the spring of 1929 the State had acquired more than 6,000 acres of land under this authority. The conservation commissioner intends to plant 20,000 acres of productive State forests in 1930, if it is possible to prove title to that much land in time. In preparation for this planting two new forest nurseries have been laid down in the State's southern tier of counties.

In 1929 New York planted 9,135,000 trees on State-owned land, using 2,000,000 of these to reforest game refuges.

Massachusetts Inventory of Forests

Potential forest area makes up 62 per cent of the total area of Massachusetts, the State department of conservation recently announced on the basis of a town-by-town survey. The classification "potential forest area" includes with present forest area abandoned fields and pastures that are coming up to brush and scattered tree growth. On 80 per cent of the forest area the stands are in general under 35 years of age. Pure northern white pine stands and mixed stands in which northern white pine clearly predominates constitute 22 per cent of the forests in the State, with a relatively good percentage in the upper size classes. Hemlock is found in small patches in nearly all the counties except Plymouth and Barnstable, but spruce is confined to the higher elevations of the Berkshire Hills. The gray birch and red maple type covers 20 per cent of the forest area.

This inventory of Massachusetts forests was begun 14 years ago. Field work has been continued each summer since then by a crew of two or three forestry students working under the direction of a representative of the State forestry organization. In the main the towns were cruised in strips 1 mile apart, run either north-south or east-west so as to cut the topography.

The expense of the survey was about $1,000 per county.

First Florida Forest Fair Held at Lake City

The heavens smiled on the first Florida forest fair, held at Lake City November 13–15, and something like 4,000 visitors turned out to see and hear what the State forest service and kindred organizations are doing. Exhibits contributed from many sources and arranged in Lake City Hall included fire protection and turpentining tools and equipment; a display of forest products; a relief map of the West Bay protective unit showing firebreaks, the locations of the district forester and fire wardens, a miniature lookout tower, and other features of the protection plan; and a chart showing in summary form the fire record for the first year of protection, including all costs. Those viewing the exhibits included many children, who through arrangement of school authorities were brought by classes from the local schools. Twenty-five automobile loads of visitors, principally turpentining operators, lumbermen, and owners of forest land, following a carefully arranged schedule, traveled to the State forest nursery at Raiford, to the experimental naval stores operations of the United States Forest Service at Starke, to a fire tower operated by the Florida Forest Service, and to a pine forest where Austin Cary, of the United States Forest Service, gave a thinning demonstration. Firebreak construction, the raising of pines in nursery beds, forest-tree planting, and improved methods of turpentining were explained as the tools and the results were displayed. At night sessions in the Lake City courthouse I. F. Eldredge discussed forest management and Assistant State Forester Wilson spoke on "new uses for old wood and new possibilities for Florida." The jazz element was supplied by a new lecture truck of the Florida Forest Service, which is equipped to show motion pictures and to accompany them with music. A novel feature of this truck is the fact that the exhibits it carries, including a number of "scenes-in-action," are so arranged as to be brought to view simply by raising the sides of the truck.

More Progress in Wisconsin Forestry Legislation

The Wisconsin Legislature has followed out with great fidelity the recommendations laid before it in the spring of 1929 by its interim committee on forestry and public lands. Among the resulting laws and revisions of laws special significance attaches to those dealing with county forestry, because of the fact that in Wisconsin tax delinquent lands revert to the county. Wisconsin law now provides that the county board of any county may by resolution acquire land, by tax deed or otherwise, for the purpose of establishing a county forest reserve. (Such a resolution may or may not be submitted to the voters for approval, according to whether the voters petition a referendum.) County-owned lands may be registered under the forest crop taxation law, without payment by the county of the "acreage share" of 10 cents per acre that is levied annually on privately-owned lands so registered. Counties taking tax deeds need not pay delinquent taxes (excess delinquency), the redemption value of outstanding tax certificates, or interest or charges until they sell the land or, if it is entered under the forest crop land taxation law, until the forest crop is harvested. Insufficiency of the sum realized to pay all such claims will not result in further liability of the county. County boards are authorized to block out county-owned forest lands by exchange. An amendment of the county zoning law empowers the counties to set aside for forest and recreation purposes lands that are more suitable for those purposes than for agriculture.

The conservation commission is authorized to block out State forest areas either by selling isolated tracts or the timber on them or by exchanging any State-owned forest lands for other lands, in either public or private ownership, that are adapted to forestry purposes. Receipts from such sales are appropriated for purchasing additional State forest lands or for improving or developing State forest lands.

Any city, village, town, or school district of the State may now acquire and manage lands for forestry purposes, either within or without its territorial limits.

The forest crop land taxation law as revised at this session sets 40 acres as the minimum size for land areas, other than farm wood lots, that may be registered under its provisions. (The law sets no minimum acreage for wood lots; the previous minimum acreage for other land areas was 160.) It provides that 50 per cent of all moneys received by any town on account of forest crop lands within the town shall be apportioned to the various school districts in which the forest crop lands are located; that owners may cut fuel wood for their own use from registered lands without giving notice; and that registered forest crop lands on which the "acreage share" is delinquent for more than three years, or lands on which the amounts due the State because of withdrawal from registration are delinquent for that length of time, shall become the property of the county. The limitation preventing the entry of lands bearing merchantable timber is removed. The State conservation commission is authorized to employ a fire warden to have charge of fire prevention on forest crop lands, and the scale of appropriations to the commission for carrying out the provisions of the law is raised to the following: Fiscal year 1931 (beginning July 1, 1930), $70,000; 1932, $100,000; 1933, $120,000; 1934, $125,000; 1935, $130,000; 1936 and thereafter, $150,000.

For the first time since the constitutional amendment of 1924, a direct tax was authorized for the support of State forestry activities. It was set at one-twentieth of a mill.

The State income tax law was amended to allow deduction from taxable income of amounts expended in establishing, caring for, and protecting forest crops on lands registered under the forest crop land taxation law.

In the act enabling the United States Government to acquire land in Wisconsin for national forest purposes, the maximum to be acquired for these purposes was raised from 500,000 to 1,000,000 acres.

The legislature's interim committee on forestry is continued, with Senator George W. Blanchard again acting as chairman.

Fire Report on Southern Mississippi Protection Area

On the Pascagoula Forest Protective Area, in southern Mississippi, 89 per cent of the 560,000 acres of land under protection was kept free from fire in the year ending June 30, 1929, District Forester Kimball reports. During the year 502 fires occurred on the area, of which 83 per cent were incendiary. The average fire burned over 126 acres. A new lookout tower has recently been added to the four previously erected on the area. The telephone system now includes 200 miles of line, with 83 boxes.

A new forest protection area of 100,000 acres known as the Wolf River Area is being organized in Hancock County, Miss.

New Protection District in West Virginia

West Virginia's forest fire protection system has been extended to a fifth district consisting of the counties of Berkeley, Jefferson, Morgan, Mineral, Hampshire, Hardy, Grant, and Pendleton. The new forest district has been christened Potomac and has been placed under the charge of Mr. C. G. Hamilton as district forester. Mr. Hamilton formerly served as district game protector for approximately the same territory. During the past summer three new fire towers were added to the one already in use in the district.

The Empire State Forest Products Association Carries On

Meeting at Albany, N. Y., on October 11, 1929, the Empire State Forest Products Association reviewed a year's cooperation with the New York State Forestry Association in work such as fire-prevention publicity and campaign activities in support of the proposed State constitutional amendment to make an emergency fund available for forest-fire fighting. As its contribution to the observance of conservation week in the spring of 1929 the association prepared and distributed a fire-prevention poster presenting in pictures and in statistics the story of how New York's forest fires originate. During the year, also, the association perfected affiliation with the New York Conservation Association, one result being that the latter body now devotes a page of its Conservationist to the interests of the forest products association.

In looking ahead to the new year's work, Secretary A. B. Recknagel expressed the feeling that the Empire State Forest Products Association has an opportunity to be of particular service to secondary wood-using industries at present not adequately represented in any association, either of manufacturers, wholesalers, or retailers, and stated his purpose to enlist such industries as associate members. For 1930 the association's budget again provides for prize awards to 4–H forestry club members. These are to total $35.

Elections for 1930 resulted in the continuance of the existing board of directors, headed by George N. Ostrander, and of the following officers: President, George W. Sisson, jr.; vice president, John N. Carlisle; secretary, A. B. Recknagel; and treasurer, W. Clyde Sykes.

Management Plan Followed by Pennsylvania Boy Scouts

When Boy Scouts of Scranton, Pa., are in camp they cut their firewood according to a forest-management plan drawn up for them by Herbert M. Nicholas, district forester of the Lackawanna forest district of Pennsylvania. The scouts' camp ground includes 441 acres of land on Goose Pond, in southern Wayne County, that is part of an auxiliary State game refuge. The management plan is designed to bring about a sustained yield of timber on the tract, to encourage the growth of the more desirable tree species, and to develop a favorable habitat for Boy Scouts, fish, and game. The recreational purpose saves the lives of many gray birches that ornament the margin of the lake; in general the scheme is to exclude the aspen-gray birch type in favor of the hemlock-northern white pine and beech-birch-maple types.

A 20 per cent strip survey of the area showed that the average acre had a timber stand of 1,953 cubic feet and an annual production of 73.35 cubic feet. For the present Mr. Nicholas has set the annual cut for the area at 5,000 cubic feet. For some years to come the cut will be mostly of inferior species and thus will be valuable only as fuel wood. All tops of cut trees are to be lopped and scattered to reduce fire hazard, and old roads and trails are to be kept open and in good condition. Two hundred thousand trees have been planted in open fields, and Norway spruce and Norway pine transplants are being grown for planting on areas from which pure stands of gray birch and aspen are to be cut. The scouts are doing the greater part of the cutting and planting, under the supervision of their camp forestry instructor. For further practice in the handling of the ax they are to prune dead side limbs from favored trees.

Record Tree Distribution in Ohio

The Ohio Forestry Department shipped 3,251,345 trees from the State forest nurseries in the spring of 1929, breaking its previous record by a quarter million. Of this total 1,512,981 were distributed to 577 farmers, 835,625 to 15 cities, and 175,100 to 14 mining companies, and 636,109 were planted on State parks and State forests.

According to the department's plans it will take only a few more years to complete the reforestation of non-wooded areas on the 32,354 acres of land now contained in Ohio State forests.

Harvest From Vermont State Forests

Forest products harvested last winter from the Vermont State forests included 403,806 board feet of timber and 103 cords of wood. The State forest service reports the cutting of 266,435 board feet of spruce, fir, and hardwoods on the Groton State Forest, Peacham, 124,571 board feet of spruce and fir on the L. R. Jones State Forest, Plainfield, and 12,800 board feet of white birch on the Proctor Piper State Forest, Proctorsville.

Big Longleaf Seed Crop in Alabama

Longleaf pines bore a large crop of seed in Alabama in 1929, the State commission of forestry reports. Even on young trees cones have been especially abundant; in Monroe County more than 2 bushels of cones, containing some 9,000 seeds, were collected from one small tree 9 inches in diameter at breast height. The State forester planned to have 1,200 bushels of longleaf cones sent to the State forest nursery, where the seed extracted from them would be used in producing planting stock for distribution in the fall of 1930. At the end of October 627 bushels of cones had been sent to the nursery.

The Michigan Conservation Commission recently authorized purchase of an additional 476 acres in the Hardwood State Forest and of an additional 1,575 acres in the Au Sable State Forest.

Education and Extension

Forestry Chair Established at University of Arkansas

The University of Arkansas has established a professorship of forestry and has filled the new position by appointing R. P. Holdsworth. Mr. Holdsworth is a member of the 1928 class of the Yale School of Forestry who spent the past year in Sweden as a Scandinavian-American scholar. For some years the university has offered a course in the principles of forestry, under Professor Cooper. Professor Holdsworth is instructing upperclassmen in fundamentals of silviculture, and in the latter part of the school year will direct them in practical silvicultural work, including seeding and planting. Later it is proposed to make a course in general forestry available to underclassmen. A course for teachers in the agricultural high schools of the State will perhaps be offered during the summer term. In due time Professor Holdsworth hopes to undertake a program of research, including studies of the many important hardwood types found in Arkansas. In developing its forestry work the university will give special attention to farm forest problems, as might be expected in a State where farmers own nearly 8,000,000 acres of woodland.

Arkansas Polytechnic College Allots Land for National Forest Nursery

The Arkansas Polytechnic College, in Russellville, Ark., has given the United States Forest Service the privilege of establishing a forest nursery on an acre of the college farm. The nursery will be a convenient source of supply of stock for planting on the Ozark National Forest. This cooperation was readily offered by the president and board of the college when it became known that forest officers were having difficulty in finding a site suitable for a nursery on the forest itself.

Forestry in West Virginia Vocational Training

Forestry made its West Virginia debut as a feature of high-school vocational training in agriculture in the spring of 1929, writes Extension Forester Thomas W. Skuce. Boys of the Wadestown, Monongalia County, High School prepared nursery beds and lined out 2,000 Norway and Scotch pine seedlings obtained through Mr. Skuce. Shade frames for use in the nursery were constructed by the boys in the school's manual-training shop. After two years in the transplant rows the trees will be planted in old fields near the school.

Gift to College of Forestry, University of Washington

The College of Forestry, University of Washington, has received a gift of $50,000 from Mrs. Agnes H. Anderson. Most of the income from the fund is to be used for graduate research fellowships; the remainder will be available for loans. Mrs. Anderson, whose father and husband were both connected with the lumber industry in the Northwest, has long been interested in the forestry work of the university. In 1924 she gave $250,000 to build and equip Anderson Hall, the university's second forestry building, as a memorial to her husband, Alfred H. Anderson.

Cornell Puts Forestry on the Air

Forestry is going on the air about once a week this winter from the Cornell University Radio Station, WEAI. In the months of September–December, inclusive, seven members of the Cornell forestry faculty were scheduled to give 15 noontime radio talks. The interest and variety of the fare thus laid before the radio audience is suggested by the program of talks, as follows:

SEPTEMBER

The Adirondack Tour	J. A. Cope.
4–H Forestry Program, New York State	J. E. Davis.

OCTOBER

Forest Fires and Forest Hunters	R. S. Hosmer.
Home-Grown Heat	J. A. Cope.
Amendment No. 4	R. S. Hosmer.

NOVEMBER

Measuring the Wood Lot Crop	J. Bentley, jr.
4–H Forestry Field Days	J. E. Davis.
Cornell Wood Lots	S. N. Spring.
Cornell's 2,000-Acre Forest	J. N. Spaeth.
Hardwoods versus Softwoods: Timber Growing in the North and South	F. I. Righter.
Crop Trees of New York State	J. A. Cope.

DECEMBER

Working a 4–H Wood Lot	J. E. Davis.
How Cutting has Improved the Cornell Wood Lots	S. N. Spring.
Christmas Trees	R. S. Hosmer.
Marketing Forest Products	J. Bentley, jr.

Cornell University has enrolled 95 undergraduate and 5 graduate students in its professional forestry course this term.

4–H Club Boys Join in Adirondack Forestry Tour

Five New York State boys participated in the Adirondack forestry tour arranged by the New York Conservation Department and farm bureaus in September, 1929, joining with 75 men in a 4-day field study of private and State reforestation projects. As in 1928, the Empire State Forest Products Association paid the expenses of the tour for the boy who won first place in second-year 4–H forestry club work. The four other boys were sent by fish and game clubs of Tompkins and Orange Counties in recognition of excellence in first-year forestry club work.

In the four years since 4–H forestry club work was begun in New York enrollment in the clubs has grown to more than 1,000. In 1929 not only have new installments of club members been busy with the first-year work in forest planting and the second-year work in "forest appreciation" (which includes making a collection of leaves, twigs, and fruit of 15 local trees), but a number of third-year workers have undertaken projects in woodland improvement. The complete plan of work developed for the clubs includes a fourth year, in log scaling and timber estimating.

Since August 1, 1929, junior forestry extension activities in New York have been directed by J. E. Davis, who was formerly extension forester for Chautauqua County and is now assistant extension forester for the State.

Jefferson Forest Research Fund

A fund to be used for forest research has been established by an anonymous donor as a memorial to Thomas Jefferson. Alfred Akerman, professor of forestry at the University of Virginia, is to direct the research thus provided for. The donor has suggested that Georgia be made the field of research for the present, and as two subjects of inquiry has suggested (1) the effect of multiple taxation on cutting of immature timber crops and (2) the trend of State and Federal forestal activities in their relation to the Jeffersonian principles of a large measure of freedom for the individual, local self-government, and limited Federal Government. Professor Akerman invites suggestions as to subjects to be chosen for inquiry, methods to be used in making inquiries, and the publication of findings.

Forest Service Notes

Budget Bureau Recommends $2,419,000 Increases in Forest Service Appropriations

Funds available for protecting the national forests from fire will be larger by $2,019,500 in the fiscal year 1931 than in the current year, if Congress follows the advice of the Bureau of the Budget. The bureau is recommending an increase of $188,500 in the appropriation to the Forest Service for prevention of forest fires, an increase of $331,000 for protection improvements on the national forests (including $25,000 specifically allocated to the national forests in southern California), and an increase of $1,500,000 for protection roads and trails. Further increases recommended for national-forest protection are $25,000 for combating injurious insects and an equal amount for blister-rust control.

Research funds of the Forest Service will be increased by $238,000 if the Budget Bureau's recommendations are accepted. The proposed increases included in this amount are $60,000 for forest-management research, $18,000 for range investigations, $50,000 for forest products investigations, $85,000 for a survey of forest resources and requirements, and $25,000 for studies in forest economics.

For Federal cooperation with the States in forest fire protection an increase of $300,000 is recommended, and for cooperative distribution of planting stock one of $10,000.

An increase of $15,000 is recommended for planting on the national forests, and one of the same amount for range improvements.

The sum of all recommended increases to the Forest Service is $2,419,450.

National Forest Reservation Commission Approves 10-Year Program

Meeting on November 2, the National Forest Reservation Commission approved Federal acquisition of 85,195 acres of land for national-forest purposes. This purchase program covers 11 areas located in the three Lake States and in five Eastern States. The largest areas approved for purchase are located within the Catahoula unit in Louisiana, the Mackinac unit in Michigan, and the Moquah unit in Wisconsin. The average price of the land involved is $2.69 per acre and the total obligation is $229,406.82.

At this meeting the commission had before it the matter of proposing to Congress a program and policy for the purchase of lands for national forests in the 10-year period following June 30, 1931, when the Woodruff-McNary Act expires. It agreed to transmit to Congress a program for the purchase of 9,400,000 acres of land for national-forest purposes, and to recommend that Congress adopt a policy of appropriating $5,000,000 per year for such purchases for the 10-year period beginning July 1, 1931. This program would apply only to lands lying east of the ninety-fifth meridian.

Heptane from California Pine Trees

By C. L. Hill, United States Forest Service

Two kinds of pine trees, both confined largely or entirely to California, have prospects of a step-up in the economic scale because of a hitherto unexploited product of their resin. The product is heptane. One of the trees is the valuable timber species Jeffrey pine, or apple pine as the mountain people call it because of the odor of apple or pineapple that is usually emitted by its bark. This tree is found in the higher mountains almost throughout the length of California. The second is the Digger pine, which in the past has figured as a species of little value because its principal use was for fuel wood. The straggling form and thin gray foliage of this tree are a familiar sight along the foothills and lower levels of both the Sierras and the Coast Range. Development of a market for its resin would be welcome news to ranchers in the foothill regions of California.

The resin of these two trees was early discovered to have curative value as an application for cuts and wounds. During the Civil War agents of the Union Armies, which were cut off from southern supplies of naval stores, reached far-away California in the search for such products. They tapped Jeffrey pine and distilled its resin for its healing principle, which they called abietene. Throughout the war healing salves for man and beast were made on the basis of abietene. Since then, what with the rapid development of synthetic and more highly derivative drugs, abietene has faded into the background together with the herb and root "simples" of our grandmothers' medicine chests.

Some 20 years after the Civil War ended, chemists at the University of California discovered that the liquid obtained by distilling the resin of the Jeffrey and Digger pines was in reality a hydrocarbon which the chemists call normal heptane. The publication of this fact caused a veritable uproar in the chemical world; for this heptane, a hydrocarbon commonly found in petroleum, is of a quite different nature from the terpenes which form turpentine and which were supposed to be produced by distilling the resin of any well-regulated pine tree. In fact, no other growing plant of any kind had till then been found to yield a direct or primary product of such nature. Other chemists refused to believe the findings of the California men. One German chemist derisively suggested that the California chemists had washed their glassware with some petroleum product and had failed to clean off the cleaner. The battle waged for many years before the findings of the California chemists were generally accepted among the chemical profession.

Even then the production of heptane from pine remained only a chemical curiosity. To be sure, heptane would form a valuable chemical reagent for laboratory use, especially in schools and colleges, being suited better than almost any other for the illustration to students of many important reactions. And heptane produced from these pine trees has a great advantage over that obtained from petroleum in the ease and cheapness of its recovery. The initial distillation of oleoresin from these pines produces normal heptane about 96 per cent pure; and the substances composing the remaining 4 per cent of the distilled product have boiling points so far from that of heptane that complete rectification of the latter is comparatively easy. In petroleum, on the other hand, heptane is mixed with many other hydrocarbons having boiling points so near its own that isolation of the heptane is very difficult. Thus heptane can be produced from these pine trees at a very much lower cost than from petroleum. Even so, it has seemed that an established industrial use, such as would sustain a steady producing operation, would have to be found before the general and laboratory uses of heptane could be developed.

Such an industrial use now appears to be a possibility. In connection with octane, the hydrocarbon next to it in the same chemical series, heptane can be used for the laboratory measurement of the knock of different gasolines, and therefore of the dosage of tetra-ethyl-lead that is necessary to neutralize that knock. Experiments are now in progress to perfect this method of measuring gasoline knock.

Experimental work on methods of tapping Jeffrey and Digger pines has recently been carried out by the California Forest Experiment Station. The approved method is similar to that used in the turpentine woods of the Southern States. The chipping must be done with considerable regularity; in general, however, ranchmen chipping their Digger pines could make this work a means of utilizing spare time.

Breakage in Selective Cuttings in Upper Michigan

A count recently made by the Lake States Forest Experiment Station of trees broken as a result of selective cutting operations in the Upper Peninsula of Michigan showed that the cutting, ranging from light to heavy, resulted in breakage of only 2.1 per cent of the number of trees above 2½ inches in diameter in the original stand. The operations covered 46 acres of forest at the station's northern hardwoods field station. On one 8-acre plot a heavy selective cutting resulted in the breaking of only 28 trees, of which 22 were less than 8 inches in diameter. On the other hand, in very heavy cuttings in which 92 per cent of the total volume was removed the breakage amounted to 26 per cent of the total number of trees in the original stand. The figures given are for trees broken so completely that they had to be cut; no count was made of other trees damaged by the breaking of tops or branches or the scarring of boles.

A Foolproof Method of Planting Longleaf Pine Seedlings

By Philip C. Wakeley, United States Forest Service

Solution of a difficult problem confronting all planters of longleaf pine has contributed to the success of the Great Southern Lumber Co., Bogalusa, La., in obtaining remarkably high survival in plantations of this species. As was reported in the Forest Worker for July, 1929, on some areas planted by this company in 1928–29 longleaf pine survival was as high as 98 per cent.

Longleaf pine seedlings are usually ready for planting when 10 or 12 months old. At this age they are practically stemless. When the stemless seedlings are set out, whether they are planted in the dibble hole in a cleared spot or plowed furrow or are planted with a mattock, it is vitally important to set them half an inch higher in the ground than they grew in the nursery. If this is not done the surface soil "silts in" upon the buds, killing many of the trees within the first year or two after planting and seriously delaying the growth of many more. The necessary "setting up" of the seedlings has been attained with relative ease by experienced workers putting in experimental or demonstration plantations. On large commercial operations, however, where speed is at a premium and planters are sometimes insufficiently skilled, many trees have been set too high or too low in the ground, and accordingly have died.

Red Bateman, head ranger of the Great Southern Lumber Co., found that in the commercial operations the trouble lay in the way in which the planter grasped the seedling. In taking the seedling out of the planting bucket and putting it into the dibble hole the workman picked it up by the needles and set it at a depth gauged only by eye. Bateman's correction of the trouble was simplicity itself. He required his men to pick up the seedling between fore and middle finger, with the backs of the fingers downward and with one finger on each side of the taproot just under the root collar. The thumb and last two fingers held the needles, which lay along the wrist and lower forearm. When the planter inserted the root in the dibble hole the backs of his fore and middle fingers rested on the ground, and instead of the depth of setting being gauged by eye the root collar was automatically kept above the surface by a distance equal to the thickness of the fingers. In this way vastly more uniform and successful planting was done with absolutely no loss in speed.

One of the advantages of this improved method lies in the ease with which crew foremen can enforce its use.

General Forest News

The Brown Pine Scale in Nebraska

By F. R. Johnson, United States Forest Service

During the past year those responsible for forest protection in Nebraska have come to realize that coniferous plantations in the State are seriously threatened by Toumevella pini, the Brown pine scale. The Toumevella pini is a soft-shelled scale, globular in shape and black and reddish in color. It works on the newer shoots. The attacked trees take on a characteristic sooty appearance. Unless controlled the scale quickly increases to such a degree that the infested trees die. This insect was first reported to the Bureau of Entomology from Nebraska in 1916, when it was found on a windbreak planting on the ranch of F. G. Beckhoff in Thomas County, about 15 miles northwest of the Nebraska National Forest plantations. In this case the infested trees were sprayed with oil by the Forest Service; the oil spray was found ineffective, and later the trees were cut out. In 1923 an infestation was reported in Holt County, on a large jack-pine windbreak on the ranch of R. O. Clifford. At this place the infestation was so severe that many trees were killed. Later the owner partially controlled the pest by cutting out the infested trees and branches. In the spring of 1928 an infestation of several acres was discovered in a jack-pine plantation on the Nebraska National Forest. Here the infested trees, which were of considerable size, were cut out and the branches burned. A smaller infestation in the Nebraska Forest plantations was discovered and controlled in the fall of 1928.

In the spring of 1929 a survey made by the State authorities in southern Holt County, which contains more coniferous plantations than any other portion of the State, showed that 12 wood lots out of the 35 examined were infested. Four infestations were discovered, also, in Thomas County, within 10 or 15 miles of the extensive Nebraska Forest plantations. A conference was held by Governor Weaver, State Secretary of Agriculture McLaughlin, State Nursery Inspector Gates, Extension Forester Watkins, and F. R. Johnson, of the United States Forest Service. The governor was in favor of going ahead with control work. The State department of agriculture has police authority to require landowners to clean up insect infestations, but because so little is known about the control of this scale it seemed desirable for the department to take the lead in trying out control methods. Accordingly the department purchased a power sprayer, and borrowed a truck from the forest, fish, and game commission. The California Spray Chemical

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Co. donated 130 gallons of volck. The nursery inspector and the extension forester had charge of the spraying. A number of insecticides were used with results that will be checked later. Apparently a 2 per cent solution of volck controls the scale satisfactorily. It appears now that the success of the spraying depends upon getting the young shortly after they hatch and before they attach themselves permanently to the limbs of the trees. It was decided to carry out further experimental spraying in the fall when the trees and the scale were dormant. Within another year it should be possible to determine the proper season for spraying and the best spray to use.

Two distinct centers of infestation have been discovered. The larger is in the southern part of Holt County, about 80 or 90 miles east of the Nebraska Forest plantations. A smaller infestation is located in Thomas County, 10 to 15 miles from the Nebraska Forest plantations. Evidently, infestation with this scale in Nebraska has for the most part originated in certain plantations established with trees shipped in from Minnesota. In the opinion of the State men who have studied the situation the scale has been spread from one or two infested places by birds, particularly by crows. Crows have established many rookeries in the older coniferous plantations throughout central Nebraska. For several years it has been noticed that the number of crows in the Nebraska Forest plantations is increasing; so that if the crow is an agent in the spread of the scale the presence of the insect in these private plantations greatly endangers the success of the Nebraska Forest project. Realizing that if the scale spreads widely over Nebraska it will cause a severe setback to tree planting in the State, the Nebraska extension forester has made control of the insect one of his major projects. The supervisor of the Nebraska National Forest is keeping a close watch for evidence of the insect on plantations within the forest.

So far the scale has been found mostly on jack pine, but it has also been found on Scotch pine.

Chestnut Trees Available for Tannin Extraction Many Years After Death

Chestnut trees 20 to 30 years dead show no appreciable diminution of tannin content, according to the results of a recent study by pathologists of the Bureau of Plant Industry. Cooperators in this study included 16 chemists, most of whom represented companies manufacturing chestnut-wood extract. Specimens of wood of representative live and dead chestnut trees averaging about 12 inches in diameter were collected from five localities in the southern Appalachians. Because of the wide variation even among similar trees from the same plot, composite samples were made from 5 trees each in the earlier work and later from 10 trees each. Analyses were made according to the official method of the American Leather Chemists Association.

Because it was desired to test trees that had been dead for a considerable number of years, blight-killed chestnuts could not be used in the study. The tests were made on trees that had been killed by girdling or by fire. In reporting the findings, however, Pathologists R. M. Nelson and G. F. Gravatt apply them directly to the great quantities of chestnut timber that have been killed by blight in this country within the past few years. Previous investigations showed that the action of the chestnut-blight fungus, which does not decay the wood appreciably, does not lower the tannin content of trees attacked by the blight. Tests of decayed heartwood and sapwood made in connection with the present study indicated, also, that the action of decay-producing fungi reduces tannin content to a slight degree only.

Analyses made in the course of this study showed that in live chestnut trees tannin constitutes between 10 and 12 per cent of the bark, between 7 and 11 per cent of the heartwood, and between 3 and 4 per cent of the sapwood. In both living and dead trees the tannin content was very great in the roots and was slightly greater at heights of 3½ feet and 44 feet than at 25 feet.

No marked correlation was found between specific gravity and tannin content, whether in green, sound, dead, or decayed chestnut wood.

Virginia Farmer Buys Woodland With Its Own Timber

By Gordon Furr

On a recent visit to a small farm in Fairfax County, Va., as I approached the house I saw cords of poplar, gum, pine, and white oak on the road, as well as felled trees in the woods ready to be cut into cord lengths. This surprised me, for last year the owner had given me to understand that he did not intend to sell any more timber off his place; in 1921–22 he had cleared $1,500 by selling timber off his 47 acres. (Forest Worker, May, 1928.) The reason, I found, was that he wanted to make timber pay for an addition to the farm—the tract of woodland from which he was getting the timber. This tract of woodland, 97½ acres, he had bought for $3,000.

Since November, 1928, this farmer has sold 100 cords of poplar and gum to a pulp and paper mill at $9 per cord, placed on the road one-half mile from the woods. Cutting and hauling to the road cost $4, leaving a profit of $5 per cord. The pine and oak, 56 cords, he sold in Alexandria, Va., for firewood at $13 a cord. The firewood cost about $3.50 per cord to cut and place on the road. In addition he has sold 200 locust posts to the county of Fairfax at $0.50 per post. They were cut for $0.20 apiece, giving him a profit of $0.30 per post. He has an order for 500 more if he can find time to cut them. I told him that he was not charging enough for his posts, as such posts were bringing $0.75 each in Middleburg, Va., and vicinity. He only laughed and said, "I guess I should help the county a little."

The profit from the timber already sold amounts to about a third of the purchase price of the tract. With a good deal of time still left before his 3-year note for the purchase matures, it looks as if the farmer would succeed in what he set out to do, to make his new land pay for itself.

Lumber Requirements in Western and Southern States Greatly Changed Since 1910

In a period of approximately 18 years ending with 1928 industrial wood requirements increased by 107 per cent in the Inland Empire States (Idaho and Montana) and by 34 per cent in the Southern Rocky Mountain States (Colorado and New Mexico), according to reports received by the United States Forest Service from wood-using industries in those States. In the Prairie States (Iowa, Kansas, Nebraska, and the Dakotas) the corresponding regional increase was only 1 per cent. These comparisons are based on early returns in a survey of the quantities, kinds, and forms of wood used as raw material in 1928 by industries in the United States, which has been completed by the Forest Service with the cooperation of the Bureau of the Census. The totals reported for the States in these three groups for 1928 and totals reported for the same States in earlier surveys of similar character are as follows:

Lumber Requirements of Wood-Using Industries

Requirements (thousand board feet)			Increase or decrease (per cent)
	In 1910	In 1928	
Inland Empire:			
Idaho	132,739	297,087	+124
Montana	58,719	100,011	+70
Total	191,458	397,098	+107
	In 1912	In 1928	
Southern Rocky Mountain States:			
Arizona	35,288	33,284	−6
Colorado	36,961	64,918	+76
New Mexico	36,946	59,291	+60
Utah	14,875	9,884	−34
Wyoming	2,954	2,477	−16
Total	127,024	169,854	+34
	In 1911	In 1928	
Prairie States:			
Iowa	262,597	220,388	−16
Kansas	61,107	62,154	+2
Nebraska	27,870	46,881	+68
North Dakota	1,086	3,286	+202
South Dakota	6,059	21,508	+255
Total	358,719	354,217	−1

In Idaho and Montana the principal wood-using industries are the manufacture of planing-mill products and sash, doors, and blinds, and general millwork. The regional increase of 107 per cent is due principally to development of the sash, door, and blind industry in both States. In the Southern Rocky Mountain States substantial increases were shown in the quantities of lumber required for construction and repair of railroad cars in Colorado and for the manufacture of boxes and crates in Colorado and New Mexico. The increases in these two States more than offset the decreases registered in Arizona, Utah, and Wyoming. In the Prairie States, Nebraska and South Dakota showed substantial increases, due to increase in the quantity of lumber consumed in car construction and repair, the manufacture of boxes and crates, and, in South Dakota, the growth of the sash, door, and blind industry. These increases, however, are more than offset by the net decrease in Iowa, which has apparently lost the greater part of its horse-drawn vehicles industry and of a woodenware and novelty manufacturing industry that in 1911 required 20,000,000 feet of lumber.

Forest Conservationists Petition the President

On October 30 some 50 men representing 22 nationa and regional organizations interested in forest conservation called on President Hoover and petitioned his support for a balanced program of Federal forestry activities and for more adequate protection of Government-owned forests from fire. The group had gathered in Washington, D. C., at the invitation of the American Forestry Association. George D. Pratt, president of that organization, voiced an appeal for the granting for 1931 of the Federal appropriation of $3,000,000 for the acquisition of forest lands authorized by the Woodruff-McNary Act. This act authorized appropriations for the acquisition of land for national forest purposes in the amounts of $2,000,000 for the fiscal year 1929, $3,000,000 for the fiscal year 1930, and $3,000,000 for the fiscal year 1931; but for 1930 only $2,000,000 was actually appropriated by Congress for such acquisition. Robert P. Bass, former Governor of New Hampshire, told the President that his leadership was needed in the formulation and execution of a national policy of forest development and conservation giving reasonable assurance of meeting the future economic and social needs of the country. "As the first step to that end," he said, "we petition for larger appropriations under existing congressional authorization for forest fire protection, reforestation, and tree planting, the purchase of forest land by the Federal Government, and research." John W. Blodgett, of Grand Rapids, Mich., representing the lumber industry, pointed out the need of industry for forest research and protection on an adequate scale.

Secretary of Agriculture Hyde spoke in advocacy of the reforestation of marginal and submarginal lands. R. Y. Stuart, Chief of the Forest Service, outlined a more far-reaching forestry program involving Federal cooperation with forest owners and industries in efforts to abolish destructive forest exploitation and expand forest research; Government assistance in strengthening and stabilizing the forest industries, and amplified Federal forestry assistance to farmers and other small landowners; a study of Government regulation of forest exploitation; increased fire protection for forest lands; great extension of Federal and State forest ownership; and the bringing about of more complete productivity of public forests, especially through better protection, more intensive management, and an adequate program of planting.

Foreign Notes

Canadian Timber Supply

In its report to the Third British Empire Forestry Conference, in 1928, the Canadian Forest Service estimated the forest area of Canada at 1,151,454 square miles, or 32.5 per cent of the Dominion's total land area. Of this total 311,234 square miles is occupied by accessible merchantable timber and 554,646 square miles by accessible young growth; the timber on the remaining 285,574 square miles is at present unprofitable or inaccessible.

Such data as are available to the service indicate that the coniferous timber of merchantable size includes about 382,677,000,000 board feet of saw material and about 799,321,000 cords of small material, and that the broad-leaved timber of merchantable size contains 41,960,000,000 board feet of saw material and 322,672,000 cords of small material.

It is believed that 77,038,000,000 board feet of saw timber is contained in the Eastern Provinces, 26,822,000,000 board feet in the Prairie Provinces, and 320,777,000,000 board feet in British Columbia.

Merchantable stands of spruce are estimated to contain 98,174,000,000 board feet of saw timber, those of Douglas fir 68,886,000,000 board feet, and those of white pine 15,183,000,000 board feet. The merchantable saw timber of broad-leaved species is estimated to include 15,981,000,000 board feet of poplar, 9,817,000,000 board feet of yellow birch, and 5,818,000,000 board feet of maple.

More than 90 per cent of the total forest area in Canada is owned by the Dominion and the Provinces. The Dominion and provincial governments spend some $7,000,000 a year in administering, protecting, and developing forest resources. They receive as forest revenue about $17,000,000 annually, exclusive of the revenue from fish and game.

In preparation for making an inventory of Ontario forest resources the forestry department of the Province this fall had three men sketching forest types from airplanes. The plan was to use the aerial survey as a method of "cutting out" large areas that are practically without forest growth.

Government Forestry Progress in Great Britain

The British Forestry Commission's net acquisition of plantable land amounted to 31,075 acres in the year ending September 30, 1928, according to the commission's ninth annual report. With this increase the commission's plantable lands totaled 275,913 acres, and only 57,287 acres remained to be acquired under the current program. During the year 21,496 acres of State forest land was planted with conifers. The total area planted by the commission in the 9-year period ending with September, 1928, was 116,676 acres. Forest worker's holdings formed during the year numbered 133, making the total 490, and 282 such holdings were in process of formation at the close of the year.

Danish Christmas Trees

In Denmark the Christmas-tree industry flourishes under especially favorable conditions—the demand is large, the location of most of the forests permits cheap and easy transportation of the trees by water to Copenhagen, the great seaport population center, and great quantities of trees are available as thinnings because of the custom of thickly underplanting spruce. In many of the forests the trees are set out in rows about 6 feet apart, 2 feet or less apart in the row. Because of shade the trees develop slowly; but thinnings and cuttings in the overwood, stimulating the nitrification of humus, enable them to develop dense foliage and good growth. Douglas fir brings the best prices in the Christmas-tree market, because of the beautiful symmetry of the young tree and its dense foliage and open branching. Spruce and pine are the next favorites. True fir is seldom raised in Denmark, because of aphids. The present tendency is to use trees smaller than the 8 to 10 foot size hitherto popular.

British timber buyers have contracted with the U. S. S. R. for 750,000 standards of Russian timber to be produced in 1930, according to the Timber Trades Journal (London).

Personals

Robert M. Ross has resigned as commissioner of forestry, Vermont, to become secretary of the Connecticut Forestry Association. He is succeeded by his assistant, Perry H. Merrill.

G. H. Lentz, forest extension professor and forestry camp director of the New York State College of Forestry, joins the United States Forest Service December 1 as silviculturist at the Southern Forest Experiment Station. He will be assigned to a study of erosion in its bearing on flood control. Mr. Lentz is a member of the 1917 class of the Yale School of Forestry. He became a teacher in the ranger school of the New York State College of Forestry in 1921 and has been a member of the faculty at Syracuse since 1923. While on leave in 1928 he was employed by the State of Louisiana to make a study of the hardwood bottom lands of that State.

Robert S. Maestri has been appointed commissioner of conservation of Louisiana, succeeding V. K. Irion.

Leslie E. Sawyer has accepted appointment as extension forester of Illinois, succeeding C. J. Telford. Mr. Sawyer was graduated from the Michigan State College in 1924 and for the past five years has been teaching forestry in the Georgia State College of Agriculture.

Officers elected for the year 1929–30 by the National Association of State Foresters are: President, Charles P. Wilber, New Jersey; vice president, Page S. Bunker, Alabama; secretary-treasurer, E. O. Siecke, Texas. New members of the executive committee are J. S. Holmes, North Carolina, and Rutledge Parker, Montana.

James R. Garfield, formerly Secretary of the Interior and now engaged in private law practice in Cleveland, Ohio, has been named by President Hoover as head of the commission on conservation and administration of the public domain. Other members of the commission are Elwood Mead, Commissioner of the Reclamation Bureau; George Horace Lorimer, editor of the Saturday Evening Post; Mary Roberts Rinehart, Washington, D. C.; R. K. Tiffany, Olympia, Wash.; Rudolph Kuchler, Phoenix, Ariz.; Charles J. Moynihan, Montrose, Colo.; George W. Malone, State engineer, Nevada; William Peterson, Logan, Utah; I. H. Nash, Boise, Idaho; Perry Jenkins, Big Piney, Wyo.; I. M. Brandjord, Helena, Mont.; E. C. van Petten, Ontario, Oreg.; Wallace Townsend, Little Rock, Ark.; H. O. Bursum, Socorro, N. Mex.; James P. Goodrich, former Governor of Indiana; Gardner Cowles, Des Moines, Iowa; Huntley Spaulding, Rochester, N. H.; and W. B. Greeley, Seattle, Wash. Secretaries Wilbur of the Department of the Interior and Hyde of the Department of Agriculture are ex officio members of the commission.

Lee A. Strong, assistant director of agriculture of the State of California, has been appointed Chief of the Plant Quarantine and Control Administration, United States Department of Agriculture. Mr. Strong was formerly connected with the department as a specialist in plant quarantine work. In his new position he will serve ex officio as chairman of the advisory Federal Plant Quarantine Board. C. L. Marlatt, Chief of the Bureau of Entomology, retires as Chief of the Plant Quarantine and Control Administration at his own request, in accordance with a plan authorized some two years ago.

S. Bryan Jennings, of Jacksonville, Fla., who has served as president of the Florida State Board of Forestry since it was created two years ago, has been reappointed to the board.

C. Edward Behre has been appointed director of the Northeastern Forest Experiment Station, succeeding John S. Boyce, now professor of forest pathology at Yale University. Mr. Behre has had some four years' experience in the work of the station, having first joined the staff in 1923 as associate silviculturist. Previous to that time he taught forestry in the University of Idaho for five years. He is a specialist in forest mensuration, in which field he is the author of numerous publications, and has done important work in developing methods for statistical analysis of measurements of tree form. A member of the Yale forestry class of 1917, he is secretary-treasurer of the Yale Forest School Alumni Association and editor and manager of the Yale Forest School News.

Lewis C. Everard has resigned as editor and chief of educational cooperation, United States Forest Service, to become editor for the American Association of Museums. Mr. Everard first joined the Forest Service in 1915, coming to the position of editor from that of instructor in English at Yale University. He became chief editor of the Department of Agriculture in 1919, later engaged in economic, statistical, and editorial work for the War Finance Corporation, and returned to the Forest Service early in 1925. In his new position Mr. Everard will have charge of the editing, distribution, and sale of all the publications of the association, including the periodical The Museum News.

Harold B. Shepard has been appointed to the staff of the Office of Forest Economics, United States Forest Service, to initiate a study of forest insurance for which Congress has made a special appropriation available during the current year. At the outset the study will be concentrated in the Pacific Northwest. Mr. Shepard comes to this work with 10 years' experience as forester for pulp companies and as consulting forester and 4 years' experience in fire-insurance work.

Marshall S. Wright has resigned as assistant engineer in the Washington office of the United States Forest Service, to become western representative of the Aerotopograph Corporation of America. Mr. Wright's connection with the Forest Service dates from 1919, when he was transferred from the General Land Office to take charge of entry survey activities in the Intermountain National Forest District. He has been stationed in Washington since 1923, and for the past two years has had direct charge of maps and surveys for the service as a whole. The corporation with which he has accepted employment is a branch of a world organization engaged in making topographic surveys from airplanes, and is headed by C. H. Birdseye, recently chief topographic engineer of the Geological Survey.

H. M. Sebring has left Florida, where he was district forester, to become assistant State forester of Georgia, succeeding F. B. Merrill.

Ralph W. Hayes, who has taught forestry at the University of Louisiana for the past three years, is now teaching under J. V. Hoffman in the forestry department organized this year by the North Carolina State College. Mr. Hayes, who is a forestry graduate of the Iowa State College, was formerly connected with the forestry staff of the Office of Indian Affairs, and began his work as a teacher at the Colorado State College. DeLanson Lenhart, who was graduated from the Pennsylvania State Forest School in 1927, is at the North Carolina College as a graduate assistant in the forestry department.

John H. Hanley has resigned as junior forester, Central States Forest Experiment Station, to engage in advanced study in the University of Illinois.

P. T. Gillett, a forestry graduate of Cornell University, has been appointed county forester and assistant county agent in Chautauqua County, N. Y., succeeding J. E. Davis.

Louis C. Fleck, chemist, I. B. Lanphier, engineer, and Ervin Kurth, chemist, resigned from the staff of the Forest Products Laboratory on November 1 to accept positions in the industrial field. Doctor Fleck, a University of Wisconsin graduate of 1917 who has been making researches in the chemistry of wood for the laboratory since 1921, will engage in wood-cellulose research for the Kimberly-Clark Co. at Kimberly, Wis. Mr. Lanphier, a Wisconsin graduate in civil engineering who has been attached to the container-testing laboratory since 1921, is entering the package research laboratory of the 4–One Box Machine Makers at Rockaway, N. J. Mr. Kurth, a member of the 1927 class of the University of Wisconsin who has been studying wood extractives, is joining the Du Pont organization and will be assigned to a plant in the East or South.

Members of the Northeastern Forest Research Advisory Council who have been reappointed by the Secretary of Agriculture for 3-year terms are J. W Toumey, Yale School of Forestry; W. R. Brown, Brown Co., Berlin, N. H.; R. S. Kellogg, secretary, News Print Service Bureau, New York City; and W. L. Slate, jr., director, Connecticut Agricultural Experiment Station.

Alfred E. Smith, former Governor of New York, has accepted membership on the board of trustees of the New York State College of Forestry, succeeding the late Louis Marshall.

Jesse D. Sinclair has been appointed assistant forest ecologist at the Southern Forest Experiment Station. Mr. Sinclair received the B. S. degree from the University of California in 1926 and the M. S. degree from the same institution in 1929.

E. C. Sherrard, acting in charge of the section of derived products, Forest Products Laboratory, has been elected chairman of the cellulose division of the American Chemical Society, succeeding J. L. Parsons.

Bibliography

An American View of Swedish Forestry

By E. N. Munns, United States Forest Service

George Sargent Perry's book on forestry in Sweden holds much interest for a recent visitor to Scandinavia and should appeal to all those who are desirous of knowing more about the forest conditions and problems of northwestern Europe. It presents a general view, historical and legal, of local conditions as they have developed through the last few centuries. Types, trees, and silvicultural practices are described in detail. The economics of land use and of forest management are well treated. Utilization, taxation, and regulation are not overlooked.

Professor Perry finds three reasons for the promising progress of Swedish private forestry: "(1) The Government on its extensive areas is practicing the best possible methods and making it pay; (2) careful experimental work lies back of most methods in use, and there is no dearth of funds to support forest research; (3) laws compel landowners to take proper management measures or forfeit both land and crop under certain conditions."

Not only does the author consider the forest as he saw it locally, but here and there he brings in contrasts, drawn "from the viewpoint of an American forester," between the Scandinavian conditions and those of the United States; and his own comment on Swedish practices gives added value to the work. Some of the things he points out are well worth having called sharply to attention, such as that with the modern tendency favoring natural regeneration meth-

ods we are devoting too much educational attention to artificial regeneration; that seed can be taken from colder localities to warmer with far greater success than from warmer to colder; that local species are of greater value than exotics; and that charts are more helpful than tabulations, whether for propaganda or for management purposes.

A number of things are missing from Perry's work. The most important omission, from my point of view, is a full discussion of the various economic timber surveys. No doubt this is due partly to the fact that much of the information on which the book is based was collected in 1923, before the surveys had progressed very far; but the treatment of the subject suggests that the author failed to grasp the full significance attaching to such surveys, especially in a country where continued prosperity seems to depend absolutely upon continuous forest production. We in the United States need, and need badly, data such as are being obtained through these surveys, as a basis for our own forest land policy and for a proper understanding of our forest problems.

It is hoped that the appearance of this book, describing the forestry practices of Sweden, will not increase the tendency already evident in some quarters to accept blindly the teachings of the Swedish school of thought as applicable in the United States. It should be fully recognized that European conditions are different from those in the United States. However, the book should be widely read by foresters, no matter whether these style themselves silviculturists, forest managers, or economists. Particularly should it be read by research men, teachers, and those intending to visit Scandinavia.

(Perry, George Sargent: Forestry in Sweden and Adjacent Lands from the Viewpoint of an American Forester. Published by the author, Mont Alto, Pa., 1929.)

Manuals on Kiln Drying, Air Seasoning, and Gluing Wood

After years of experiment and experience the Forest Products Laboratory is bringing out, with increasing frequency, useful complete manuals for the handling of forest products. Two years ago the results of 20 years' accumulation of information about pulping were brought together in Department of Agriculture Bulletin 1485, The Suitability of American Woods for Paper Pulp. In the last two years three manuals that cover in a comprehensive way the seasoning and gluing of wood have been prepared at the laboratory. In addition a tabular statement of the strength of North American woods, the outcome of tests made at the laboratory, has been published.

The most recent of the manuals, The Gluing of Wood, by T. R. Truax, Department Bulletin 1500–D, provides information for the improvement of shop practice in plants that glue wood. It describes the properties of glues used in woodworking, gives methods for testing glues, and discusses fully the preparation of glues for use and the operations involved in gluing wood. It also describes methods of correcting gluing defects and of calculating pressure on joints. Thirteen plates and 18 figures illustrate important points discussed in the text.

The Air Seasoning of Western Softwood Lumber, by S. V. Fullaway, H. M. Johnson, and C. L. Hill, Department Bulletin 1425, presents principles and practices intended to aid in reducing the losses from air seasoning in western yards, shorten the average drying time, and lower shipping weights on western softwood lumber. Approximately 35 per cent of the annual cut of the principal western lumber-producing regions, or about 4,500,000,000 feet, worth $120,000,000, is air seasoned. Competition is keen and improvement in seasoning methods is highly desirable. The bulletin begins with a discussion of the principles of air seasoning, but the major part of the text is given up to suggestions of a concrete and practical nature in regard to the layout of the yard, the handling of the stock, the construction of the piles, and the solution of the particular drying problems of the Douglas fir, Inland Empire, California pine, and redwood regions. The text is illustrated by 8 plates and 10 figures.

The Kiln Drying Handbook, Department Bulletin 1136–D, by Rolf Thelen, is a complete manual for the operation of dry kilns for seasoning lumber, with suggestions for the drying of other partly manufactured wood specialties. Drying schedules and seasoning specifications with special schedules for aircraft lumber, bent stock, plywood panels, etc., are included. The bulletin contains 16 plates and 14 figures.

In general the information contained in these manuals is based on experimental work at the Forest Products Laboratory, Madison, Wis., and has been tested in commercial practice. They are at once practical helps to the manufacturer, embodying scientific and commercial experience and test results, and aids to forest conservation in that they all look to the more efficient use of the timber supply of the Nation. Copies of all of them may be obtained, while the supply lasts, from the Office of Information, United States Department of Agriculture, Washington, D. C.

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